

THE EFFECT OF ONLINE TRACKING AND TIMELINESS OF DELIVERY ON CUSTOMER SATISFACTION AT SHOPEE INDONESIA

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Abstract: Speed of delivery times and online tracking in the world of e-commerce are becoming important factors for evaluating customer satisfaction at Shopee Indonesia. In the current digital era, e-commerce is growing rapidly and has become one of the most popular platforms. One of the determining factors for logistics success is efficiency and transparency. Through a survey of 100 Shopee Indonesia customers calculated using the slovin formula and processed using the SmartPLS method, data was collected to measure the impact of delivery speed and online tracking on customer satisfaction. Fast delivery directly increases customer satisfaction, while online tracking gives customers a sense of security and trust. From the data generated the influence of inline tracking and speed of delivery has a significant effect on customer satisfaction. This research aims to evaluate the impact of delivery speed and online tracking on customer satisfaction at Shopee Indonesia.

Keywords: *Speed of delivery time; online tracking; customer satisfaction; E-Commerce.*

1. Introduction

In the current era of globalization, internet development is increasing every year, including in Indonesia. According to statistical data, Indonesia is among the ten largest internet user countries in the world. The number of internet users is increasing, indicating increasingly rapid technological progress (Ruminda, 2022). It could even be said that information technology has entered all aspects of human life, one of which is the business sector. Businesses that are switching to conventional digital businesses such as e-commerce. The high number of millennials who shop via e-commerce greatly influences their closeness to digital technology. This is what makes the millennial generation a major concern in the current technological era, because their attitudes, behavior and lifestyle are different from before. With changes in consumer behavior, the need for courier services and deep logistic e-commerce not only the emphasis on speed and loyalty but also on increasing trust and loyalty towards service provider companies. One of the most important components in increasing customer satisfaction in e-commerce is fast and on-time delivery, in this case customers often feel worried about the time in delivering goods and when choosing a delivery service, because customers have a preference for fast and on-time delivery. If delivery can be completed according to the estimated time in the system, then this will gain added value from the customer's perspective. Increasingly tight competition in the business world encourages companies to develop appropriate strategies to win the competition (Ruminda & dkk, 2022). In this case, to increase customer satisfaction, companies can focus on improving effective information systems so that customers can easily

access information. This service allows wider interaction via internet media, connecting sellers and buyers in the shopping *processon* lineeffectively and efficiently. Sothat customer satisfaction is increasing with the use of Shopee, it is necessary to pay attention to saveral thingssuch as timeliness of delivery and tracking online Shopee.

2. Literature Review

a. Online tracking

Online tracking is a tracking system designed by logistics companies to make it easier for consumers to monitor the status of their products during the shipping process. This system provides up-to-date information about goods or documents that have been shipped and tracked using the receipt number as a service indicator (Thomas et al., 2020; Zhou & Mou, 2022). Uncertainty in tracking goods can lead to customer dissatisfaction, so the company provides this serviceto reduce customer concerns about product status uncertainty and provide the latest information about the product. This tracking system serves to monitor the delivery process, including following the trail of objects or interpreting the meaning of the path traveled. By utilizing the position generated by the tracking equipment, this system can track the location of vehicles that are transporting goods. The tool used in this system is active tracking, which allows businesses or customers to see the location of the vehicle directly while the goods are being delivered or picked up (Hastjarjo & Wahyunengseh, 2021).

Online tracking is a service provided to customers to provide up-to-date information about the status of documents or goods sent or received. Online tracking is a web-based tracking system developed by logistics companies to make it easier for customers to monitor the status oftheir products during the shipping process (Zhou & Mou, 2022).

b. Timeliness of delivery

Timeliness of delivery refers to the delivery of products ordered by customers, to their hands according to the promised time. Prompt delivery means that the order is delivered according to the time agreed upon between the customer and the store. The top priority for service companies is to ensure that deliveries are made on time, so customers need to be careful when assessing the service. The company will understand their needs. Timeliness is defined as delivery according to the scheduled time. It is in accordance with the customer's preferences and schedule (Ricardianto et al., 2023). However, customer dissatisfaction with the service will arise if the service provider fails to meet the deadline that has been set according to the schedule rules (Arroffi et al., 2021).

According to Shintia Juniariska in the journal (Adam Arroffi et al., n.d.) timeliness of delivery is a major concern for service companies. Timeliness is very important because it is a factor in consumer assessment of the company and helps companies understand consumer needs. Timeliness quality is defined as the service provided in accordance with customer preferences. Timeliness of delivery is one of the main factors in increasing customer loyalty. Timeliness is defined as the time span when a customer orders a product until the product is received (Li et al., 2021; Xu et al., 2023).

c. Customer satisfaction

Customer satisfaction refers to the level of customer response to the results of the service received. This satisfaction arises from the desire to express opinions, feelings, and thoughts from a particular point of view. When satisfaction is achieved in accordance

with customer needs, expectations, positive feedback, and recommendations can be received as a result of such satisfaction (Maria et al., 2022). Also suggests that service quality can be used as a parameter to ensure the desired customer outcome. Adding that one important element that has become a standard for measuring customer satisfaction is on-time delivery. This assertion is important because customers will feel satisfied with the service if the deadline is met, thus preventing complaints from dissatisfied customers (Hendrawijaya et al., 2020). Customer satisfaction is an emotional condition in which a person feels satisfied as a result of the comparison between the performance of goods or services and their expectations (Zhao et al., 2022). If the performance is below customer expectations, then they will feel disappointed. And vice versa, if the performance matches customer expectations then they will feel satisfied. Customer satisfaction tends to have a more positive relationship with the company when they are satisfied. Customer satisfaction directly affects loyalty, product or service recommendations to others, and is likely to make repeat purchases (De Vos et al., 2022). Therefore, maintaining customer satisfaction is very important to maintain competitiveness and market position.

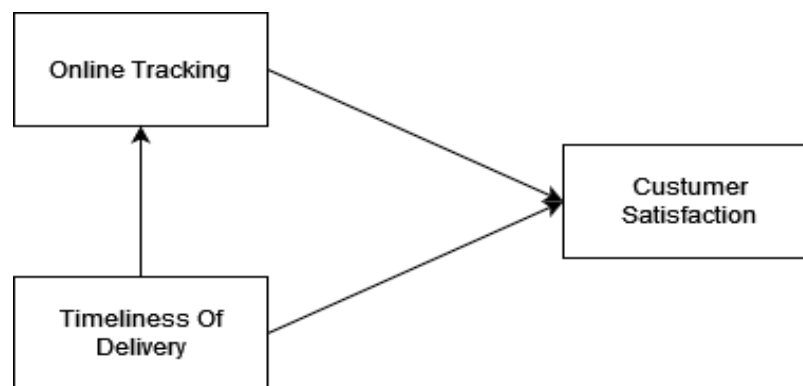


Figure 1. Research Method

d. Hypothesis

H1: The effect of online tracking on customer satisfaction.

H2: The effect of on-time delivery on customer satisfaction.

H3: The effect of online tracking on customer satisfaction through on-time delivery.

3. Literature Review

This research is a type of quantitative research that uses hypothesis testing through the SEM-PLS (Structural Equation Modeling-Partial Least Square) method. Quantitative research is an investigation of social problems based on tests consisting of variables that are measured numerically, then analyzed using statistical procedures to determine the validity of the predictive generalization of the theory (Hair et al., 2019; Hair Jr et al., 2017).

The criteria for respondents used in this study include: (1) respondents aged 18-30 years, and (2) respondents who used the Shopee application in the last three months. The population of this study consists of Shopee application users in Indonesia with a total number of 103,000,000 users. To determine the sample in this study,

researchers used the Slovin formula with the following calculations.

$$n = \frac{N^2}{1 + (NE^2)}$$

To determine the number of samples in this study, the calculation proposed by Slovin was used with an accuracy rate of 10%.

Description:

n : sample size/number of respondents

N : Population size

E : Percentage of allowance for accuracy of sampling error that can still be tolerated

e : 0.10

The sample range taken using the Slovin technique is 10% of the research population. The population of this study amounted to 103,000,000 people, and the level of leeway used was 5%, which was then rounded to achieve conformity. So, to determine the number of research samples, the calculation was carried out using the following steps:

$$n = \frac{N^2}{1 + (N + E^2)}$$

$$n = \frac{103.000.0000}{1 + (103.000.000 + 0.10^2)}$$

$$n = \frac{103.000.000}{1 + (103.000.000 + 0,01)}$$

n= 99.9 rounded to 100 people.

The data collection technique used is through a scale or questionnaire, which includes the variables of on-time delivery, online tracking, and customer satisfaction. The data was collected by distributing questionnaires to 100 respondents, who were Shopee app users in the past three months. Each variable is measured using an ordinal scale with predefined indicators, where respondents provide answers using a Likert scale. This aims to facilitate the measurement of the influence between the independent variable and the dependent variable.

Tabel 3.1

Variable measurement

Variable	Operational definition	indicator	Source
Timeliness of Delivery	what extent activity or process carried out accordingly with that time has been determined or omitted.	1. Estimasi time 2. Proper delivery good 3. Responsibility 4. accuracy	(Oetama et al., 2024)

Online tracking	Strac location and item status, real-time, this system utulites technology such as GPS and barcode.	1. reliability 2. privacy 3. customer service 4. efficiency 5. responsive	(Adam Arroffi et al., 2021)
Customer satisfaction	Consumer willingness to participate in shopping, surveys, reviews, or direct feedback from customer	toconformity expetation loyalty recommendation increased	(Sarifah et al., 2023)

4. Result and Discussion

1. Result

After conducting a survey, the results obtained show the level of customer satisfaction with Shopee services. The survey was conducted via a questionnaire with 100 respondents selected based on gender and age. It was found that online tracking and on-time delivery significantly increased customer satisfaction on Shopee. This research aims to determine the extent to which Shopee services can increase customer satisfaction by analyzing the online tracking system and the timeliness of delivery provided. Factors that influence customer satisfaction with online synchronization and on-time delivery include reliability, responsiveness, efficiency, time estimation, accuracy, security, and delivery that meets customer needs. Nonetheless, these elements contribute to customer satisfaction especially in terms of on-time delivery which increases customer confidence by providing reliable information in delivery.

A. Convergent Validity Test

The procedure used to test validity is convergence validity, which is performed by correlating the item score with the construction score. The result of this process is a factor loading value. The load factor is considered high if the component or indicator has a correlation of more than 0.70 with the measured construction. However, in early research to develop an instrument, load factors of 0.5 to 0.6 were considered.

Table 4.1 Validity Test Results

Item	KP	KWP	PO
KP2	0.785		
KP3	0.868		
KP4	0.855		
KWP1		0.734	
KWP2		0.868	
KWP3		0.897	
KWP4		0.881	
KWP5		0.843	
PO1			0.762
PO2			0.890
PO3			0.891
PO4			0.894

Based on the results of table 4.1, it can be explained that each indicator has a loading factor of more than > 0.70 , indicating that all indicators of each variable have a valid load factor value. Furthermore, convergence validity is tested by looking at the average variance extracted value. The AVE value is considered both if it is greater than 0.50 and the correlation between variables is smaller than the AVE root.

Table 4.2 reliability test

Average variance extracted (AVE)	
Online Tracking	0.741
Timeliness of Delivery	0.717
Customer satisfaction	0.722

Based on the results in Table 4.2, it can be explained that the AVE value for online tracking is 0.741, on-time delivery is 0.717, and customer satisfaction is 0.722. These values indicate that all constructs have met the requirements for convergent validity based on Average Variance Extracted (AVE).

B. Discriminant Validity

Discriminative validity testing is obtained from the result of cross loading value, measurement using constructs and the average variance extracted (AVE) value. Cross loading is used to evaluate whether latent variables have sufficient discriminatory validity. This process is carried out by comparing the correlation between indicators and other latent variables. If the correlation value between the construct and its measurement items is greater than the correlation between the construct and other constructs, this indicates that the latent construct is more effective in predicting its own measure than the measure in other blocks. Thus, the construct is said to have high discriminative validity. The reliability of this discriminatory validity can be seen from the cross loading value between each indicator and its construct.

Table 4.3 Cross Loading Values

Item	KP	KWP	PO
KP1	0.886	0.622	0.510
KP2	0.785	0.526	0.463
KP3	0.868	0.503	0.536
KP4	0.855	0.545	0.565
KWP1	0.359	0.734	0.213
KWP2	0.556	0.868	0.322
KWP3	0.576	0.897	0.327
KWP4	0.578	0.881	0.519
KWP5	0.617	0.843	0.359
PO1	0.492	0.319	0.762
PO2	0.531	0.384	0.890
PO3	0.538	0.348	0.891
PO4	0.542	0.412	0.894

Source: Data processed by researchers (2024)

Based on table 4.3, all indicators show cross loading values for their respective constructs that are greater than cross loading values for other constructs, so they are declared valid. Therefore, it can be concluded that the constructs of online tracking, on-time delivery, and customer satisfaction have good discriminant validity.

The results of the discriminant validity test show that the correlation value between the construct and its indicators is greater than the correlation between the construct and other constructs. Thus, it can be concluded that all latent constructs have good discriminant validity, because they are able to predict indicators in their respective blocks better than indicators in other blocks.

The results of the discriminant validity test show that the correlation value of the construct with its indicators is greater than the correlation value with other constructs. Thus it can be concluded that all latent constructs show good discriminant validity because they can predict indicators in their block better than indicators in other blocks.

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C. Composite Reliability

Table 4.4 Composite Reliability Value Results

Construct	Cronbach Alpha	Reliability composite (rho_c)
KP	0.871	0.912
KWP	0.901	0.926
PO	0.882	0.919

Source: Data by researchers (2024)

Based on the results in Table 4.4, all variables show a composite reliability value above 0.7 with the lowest value being 0.882 for the online tracking variable (X1) and the highest value being 0.901 for the on-time delivery variable (X2). These results indicate that the research model is declared reliable because it meets the composite reliability criteria.

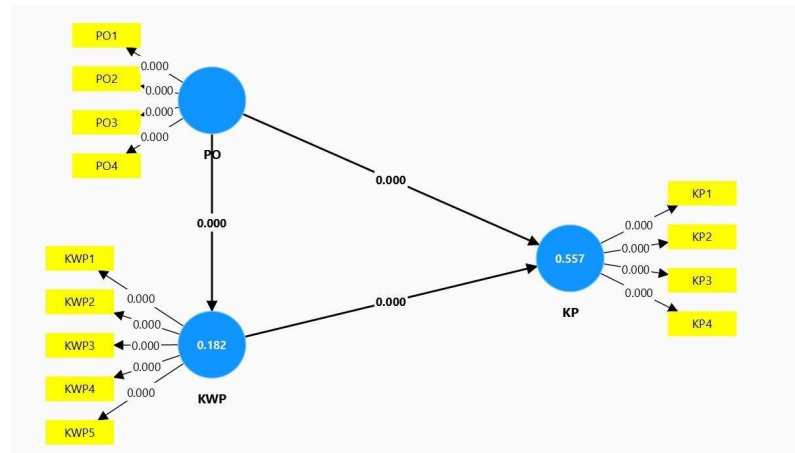


Figure 4.1 Graph of bootstrapping values

Source: Analysis results using *SmartPLS4.0* (2024)

D. Hypothesis Test

Table 4.5 Results of Hypothesis Test

Construct	Original Samples (O)	Samples Mean (M)	Standard Deviation (STDEV)	t value	p value
PO-KP	0.409	0.420	0.056	7.360	0.000
KWP-KP	0.473	0.468	0.073	6.453	0.000
KWP-PO-KP	0.202	0.201	0.052	3.910	0.000

2. Discussion

H1: Timeliness of delivery on customer satisfaction

The variable on delivery time affects customer satisfaction, obtaining a value of $6.453 > 1.96$ or P values < 0.05 . T-statistic $>$ t-table or P-values $<$ alpha. Then H1 is accepted, namely that on delivery time has an effect on customer satisfaction. Based on the result of data calculation, it can be concluded that online assassination significantly affects customer satisfaction (Chan & Gao, 2021; Xu et al., 2023). Respondents stated that timely delivery makes customers feel satisfied because they get the itemsthey buy arrive at the right time according to the time accuracy agreed upon by the seller and buyer. On delivery time has a significant influence on customer satisfaction (Cho et al., 2021; Ruminda et al., 2025).

H2: Online tracking of customer satisfaction

The online tracking variables affect customer satisfaction, obtaining a value of $7.360 > 1.96$ or P values < 0.05 , that T-statistics $>$ t-table or P values $<$ α (Hastjarjo & Wahyunengseh, 2021; Maslowska et al., 2020). Then H2 is accepted, namely that online tracking has an effect on customer satisfaction. Based on the result of data calculation, it can be concluded that on-time delivery significantly affects customer satisfaction (Reilly & Reeves, 2023). Respondents stated that using the on-time delivery at shopee makes customers feel satisfied because they can track theiritems in real time. The online tracking has a significant influence on customer satisfaction (Zhu et al., 2022).

H3: Online tracking of customer satisfaction through timeliness of delivery

The online tracking variables affect customer satisfaction through delivery time, obtaininga value of $3.910 > 1.96$ or P values < 0.05 , T-statistics $>$ t-table or P values $<$ α (Astria et al., 2023; Rayansa et al., 2022). H3 is accepted from the data obtained that onlinetracking significantly affects customer satisfaction through timeliness of delivery (Li et al., 2021; Parlindungan et al., 2022). Respondentsstated taht using the online tracking system at Shopee made customers feel satisfied through the timeliness of delivery that was in accordance with the specified time.

5. Conclusion

Based on research we conducted on Shopee in Indonesia, it was found that online tracking and on-time delivery have a significant influence on customer satisfaction. The results show that customer satisfaction is strongly influenced by online tracking and delivery timeliness. Customers tend to prioritize certainty and security when goods are ordered to arrive in their hands in a timely manner. From the results of the research conducted, the proposed hypothesisstates that online tracking and on-time

delivery have a positive effect on Shopee customer satisfaction in Indonesia.

Thus, this hypothesis is accepted due to strong evidence from the data processing results above. This finding shows the importance of both variables in increasing customer satisfaction so companies are advised to continue improving these aspects in their operations.

6. Implications

This research shows that Shopee successfully delivers online tracking and on-time delivery of goods that satisfy customers. However, there are some things that need improvement, in terms of online tracking, it is necessary to improve information related to the location of the delivered goods and more precise time estimates, improve features that can be tracked more specifically, real-time tracking so that customers can monitor goods transparently. Regarding timeliness, it is necessary to improve strategies to reduce delivery delays by optimizing routes, delivery time management, and delays in delivery that tend to make customers complain and dissatisfied.

7. Research Limitation

Previous research considering the variables studied only focuses on online transactions and on-time delivery as factors that influence customer satisfaction. Other factors such as price, quality which can also influence customer satisfaction are not part of this research. This research was also conducted over a short period of time which may not be sufficient to capture changes or trends in customer preferences over time, this may affect the accuracy of observation in the long term.

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